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Evolving capabilities and innovative intentionality: Some reflections on the role of intention within innovation processes

SUMMARY

We may argue that individual and organisational dynamic capabilities evolve through the interaction of intentions and action goals. Capabilities are renewed and reshaped by the appearance of new action goals. A feedback process between capabilities and goals opens up new possibilities of action. This may happen when agents (organisations and individuals) act towards their goals, transforming capabilities and renewing the spaces where actions are conceived and deployed. Moreover, agents' goals vary not only in the sense that they are different but also because they are characterised by different transforming intensities. The concept of innovative intentionality synthesizes this idea. Innovative intentionality is defined as the will to conceive or imagine realities which differ from the perceived realities, with the purpose of making them effective. This concept appears to be useful for addressing the divergence of innovative dynamics among organisations and societies.

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1. INTRODUCTION

Within the evolutionary tradition, economic and social systems become evolving systems characterised by constant endogenous change brought about by the generation of novelties which result in its self-transformation over time (Rubio de Urquía 2003). Evolution is seen as a system's self-transformation (Witt 2003: 12–13). It is also perceived as 'a process, or a cluster of processes, which combine the generation of novelties and the selective retention of some of the novelties generated' (Loasby 2001: 1).

Self-transformation processes are necessarily encompassed – and to a great extent explained – by changes in agents' knowledge (whether agents are organisations or individuals); that is, by learning processes. These are key explanatory factors of economic change: the knowledge acquired by agents and the interaction of the different agents' knowledge form the basis on which the evolutionary and complex character of economic processes rely. In particular, the literature devoted to explaining the development of evolving economic systems accords an essential explanatory role to agents' *capabilities*, which are dynamic as they are transformed over time (Loasby 1999, 2006).

If we take a closer look at the phenomena addressed by evolutionary economists (basically self-transformation and novelty emergence in economic systems) and at the concepts they use and develop to build their theories (e.g. entrepreneurship, innovation, dynamic capabilities), we observe that they all refer to processes which are deployed over time. Moreover, we could actually state that evolutionary economists have assumed the challenge of moving away from the *timeless economic system* (Shackle 1972, 1979) to the intricate world of complex dynamics (Dopfer & Potts 2004; Potts 2000).

From an analytical point of view, shifting from the standard economics *timeless system* of rational choice to evolving systems means assuming the temporary dimension of economic action which is essentially a projective action. It therefore im-

plies moving away from 'the technology of choice framework' (Encinar & Muñoz 2006) in which agents make choices on the basis of given means, given goals (objectives) of action and perfect and complete knowledge about the states of the world, and then perform actions in a timeless environment.

The acceptance of the inherent temporary dimension of human action implies the need to address the great importance that agents' past trajectories have in determining action and choice. It also implies taking into account that a choice is made from imaginable alternative *future* scenarios. Action is directed towards an uncertain, unknown future that agents imagine according to their cognition of reality, their beliefs, values, etc; all of which depend on individual trajectories and psychological make-up, and on the social collective environment (Borrás 2004; Rubio de Urquía 2005).

We cannot understand human behaviour – and therefore economic behaviour – and its transformation only on the basis of the existent reality or on past reality. It is also necessary to consider future unreality because it is in the future that goals are located; the objectives formulated by individuals and groups of individuals. Actions (e.g. producing, consuming, innovating, working, organising) are conditioned by agents' desired (Pareto 1909; Shackle 1972: 135) and pursued goals which vary greatly and are submitted to change over time. As a consequence, diversity and changes in pursued goals should be considered key explanatory elements of the process of self-transformation (evolution) of social and economic systems. Important features of novelty generation and innovation processes may be addressed by focusing on the dynamics of the agents' formulation of goals.¹ These are the imagined realities deemed possible and desirable towards which the agent orients his/her/its action (Loasby 1996; Cañibano 2004; Cañibano, Encinar & Muñoz 2004, 2006). In this sense, we refer to *enacted intention*: imaging or desiring a future scenario (a possible reality or goal) does not imply

any changes in the environment unless the agent orients her action according to those goals; unless she acts towards the goal.

The purpose of this paper is to develop some reflections which are based on the above ideas and which have led us to consider the essential role that *enacted intention* plays within economic dynamics.

We argue that the *constant feedback between enacted intention* (oriented by action goals) and *capabilities* transforms the economic system. Action goals may evolve over time and by doing so they bring about changes in the capabilities of agents that might also result in the establishment of renewed intentions and goals, and therefore in the development of re-shaped or renewed capabilities. In order to develop these arguments, we first focus on the evolutionary concept of *dynamic capabilities* (Section 2), because the role of intention and the genuine temporary dimension of action are recognised in this literature. Moving on from dynamic to *evolving capabilities* allows us to go further in the understanding of self-transformation processes.

Furthermore, considering agents' intentionality enables us to reflect on the explanation of transformation intensity and trajectory. Why do organisations (and their capabilities) evolve in different ways? The proposed concept of *innovative intentionality*, will give an important theoretical role to enacted intention in the explanation of economic change. The paper may, therefore, be located within the discussion on micro-foundations of organisational and individual capabilities and their consequences in terms of economic dynamics (Felin & Foss 2005, 2006; Loasby 2006).

The following section addresses dynamic capability building processes as *intended learning processes*. The argument moves then to the proposition of the concept of *evolving capabilities*: the constant feedback between enacted intention and capabilities results in the evolution of capabilities (Section 3). In the discussion of evolving capabilities the role of *innovative intentionality* arises.

Innovative intentionality is defined as the will to conceive or imagine realities which differ from the perceived realities, with the purpose of making them effective (Section 4). These considerations and proposed concepts provide, in our view, the possibility to keep the dynamic consistency of the evolutionary approach, particularly because important sources of novelty may be located in the *goals side* of action. In this sense, they might prove useful for further explorations of economic dynamics, evolution and entrepreneurship.

2. DYNAMIC CAPABILITIES AS INTENTIONAL LEARNING

Learning and knowledge acquisition processes are central to the explanation of economic change. Recent attempts to provide an analytical foundation of evolutionary economics describe economic evolution as 'a growth of knowledge process' (Dopfer & Potts 2004: 21). As Metcalfe and Foster (2004: xi) recognise, knowledge acquired by individual agents and the interaction of agents' knowledge constitute the basis for evolution and complexity of economic process. An extended literature has been devoted to the analysis of knowledge acquisition, use and management within organisations that need to cope with uncertainty and adapt to a rapidly changing environment, overcoming varying technological challenges. General agreement on the idea that a great proportion of organisational and individual knowledge is tacit (Polanyi 1959) has led to the development of a variety of concepts which address tacit knowledge in different ways and which have been widely used in the literature: know-how, skills, competences, routines, capacities, capabilities. In one way or another, all these concepts refer to the abilities that organisations (and individuals) have in order to reach their goals. Indeed, the fact that an organisation wants to attain a certain goal does not mean that it has the capacity to undertake the necessary actions to achieve it.

Consider the following very simple example: the managers of a firm wish to increase competi-

tive advantage by providing personal distribution services to their local clients by taking advantage of a good offer to hire a pool of cars. However, they do not want to increase costs by hiring new personnel, so if their present employees cannot drive, the firm will lack the skills to fulfil its purpose. The firm lacks competence; the employees do not know how to drive. The need for new capabilities in order to provide new services arises. The knowledge of the organisation needs to be increased: some employees should learn how to drive but also new mechanisms for organising the new distribution service efficiently should be implemented. As a result, new organisational routines may emerge. It should be noted that in this example the intention of the agent is clearly defined from the beginning.

Dosi et al. (2000: 2–4) have contributed to shedding some light on the different concepts – ‘floating in the literature like icebergs in the Arctic Sea’ – related to organisational know-how by focusing on the notion of capabilities and by establishing a clear difference between organisational routines and capabilities. As this difference is based on the role of intention, it is of utmost relevance within the scope of our general argument.

Let us consider the following definitions of ‘dynamic capabilities’:

Dynamic capabilities are the ability to reconfigure, redirect, transform, and appropriately shape and integrate existing core competences with external resources and strategic and complementary assets to meet the challenges of a time-pressured, rapidly changing Schumpeterian world of competition and imitation. [They] reflect an organisation’s ability to achieve new and innovative forms of competitive advantage [...]

(Teece, Pisano & Shuen 2000: 339)²

A dynamic capability is a learned pattern of collective activity through which the organisation systematically generates and modifies its

operational routines in pursuit of improved effectiveness. (Zollo & Winter 1999: 10)

From the above definitions it could be said that the process of acquiring or developing dynamic capabilities is a collective learning process from which the organisation improves its ability to achieve its goals (‘achieving new and innovative forms of competitive advantage’, ‘improving effectiveness’). For Dosi et al. (2000: 2–4):

To be capable of some thing is to have a generally reliable capacity to bring that thing about as a result of intended action. Capabilities fill the gap between intention and outcome, and they fill it in such a way that the outcome bears a definite resemblance to what was intended [...] It is in the building of organisational capabilities that the role of intentionality is most reliably displayed [...] we think of ‘capability’ as fairly large scale unit of analysis, one that has a recognisable purpose expressed in terms of the significant outcomes it is supposed to enable, and that is significantly shaped by conscious decision both in its development and its deployment. These features distinguish ‘capabilities’ from ‘organisational routines’ [...]

Capabilities are driven by intention, by the tendency of the agent towards a goal. In this sense we can state that the capability building process is an intended learning process. Capabilities are dynamic because they cannot be represented by a closed structure as is the case of the technology of choice timeless system. In such a system, organisations only face allocation problems where the means to reach the pursued goals (limited to maximize profits and utility functions) are given. When agents have perfect and complete knowledge, the possibility of a gap between intention and outcome is excluded.

Maintaining the assumption that economic behaviour is based on the formulation and the interactive deployment of projective linkages from means to pursued goals – that is to say, of

action plans³ (Rubio de Urquía 2005; Cañibano, Encinar & Muñoz 2006) – we could interpret the evolutionary approach to organisational dynamics as a way of ‘opening’ the *means side* of projective action. The opening results from the assumption that organisations do not have perfect and complete knowledge to reach their goals; they follow different patterns to acquire and use new knowledge or, in other words, different learning patterns. Learning will lead to the development of different abilities that will make them more or less effective (effectiveness being measured precisely by ‘the gap between intention and outcome’, between purpose and real results).

At the same time, opening this means side implies the acceptance of heterogeneity in organisations. Each one will follow its own learning pattern, resulting in different sets of capabilities and therefore, in different levels of effectiveness. Teece, Pisano and Shuen (2000: 336–7) follow the resource-based perspective by seeing in resources, capabilities and endowments key sources of heterogeneity in firms. However, they do it in a dynamic way, in the sense that what it is considered most relevant, within the dynamic capabilities approach, is the ability to perform managerial strategies for developing new capabilities. Expressions like ‘skill acquisition’, ‘learning’, and ‘accumulation of organisational and intangible assets’ show the dynamic dimension of the discussion.

Thus, the different ways in which organisations (and individuals) face and undertake this process of collective learning and capability building is an important source of heterogeneity. However, key questions need to be addressed: ‘what accounts for the fact that one organisation exhibits competence in some sense, while another does not?’ (Zollo & Winter 1999: 3); ‘how are dynamic capabilities formed?, [how] do they evolve?’ (ibid: 4); ‘[w]hat mechanisms are involved in the creation and evolution of dynamic capabilities?’ (ibid: 10). The dynamic capabilities approach opens up a vast research area which should be used to identify features characterizing

the different patterns of collective intended learning that result in the development of new organisational capabilities. Scholars’ attention is being drawn to the important question of ‘how?’ (How are capabilities formed? how do they evolve?), which shows again the dynamic dimension of the discourse. As capabilities evolve differently in different organisations which perform with diverse levels of effectiveness, there is no doubt about the interest in understanding the features which explain those different processes. If we consider the question ‘why do organisations develop capabilities?’ we will find the answer in the above paragraphs: The organisation builds capabilities in order to be in a better position to attain an intended goal.

All explanations and definitions presented so far in this section have considered the intended goal as a given goal: A process of capability building is encouraged given a certain goal [‘a recognisable purpose expressed in terms of the significant outcomes [the capability] is supposed to enable’ (Dosi et al. 2000: 4)]. New capabilities are therefore built, new patterns of behaviour arise, learning takes place and might be reflected in new actions and different ways of doing things (process innovations). After a certain time and a degree of repetition (which may vary greatly depending on the organisation) all those new patterns and actions may turn into habits. Although the organisation’s goals do not disappear and although the initial purpose remains, people start doing things without deploying processes of conscious deliberation. Actions will become regular, predictable, routinised. New members being taken on by the organisation might adopt these patterns of behaviour (routines), without necessarily knowing their origin or what they were intended for. In this sense routinised actions may be qualified as unintended, as not including elements of intentionality and deliberation (Dosi et al. 2000: 12). However, they are the result of an evolutionary process which finds its explanation and origin in the pursued goal that engenders the learning process.

It seems reasonable to state that over time specific capabilities are converted into routines. This is how the organisation may focus on new problems and deploy new learning processes. Simon's discussion on bounded rationality leads to this idea. 'Bounded rationality makes agents deal with one or a few problems at a time, in the expectation that when other problems arise there would be time to deal with those too' (Simon 1983: 20). This argument is directly linked to the concept of routine which is reformulated later in evolutionary perspective by Nelson & Winter (1982) as is suggested by the lecture of the Darwinian metaphor proposed by Witt (2003: 10–11). For an excellent survey on routines see Becker (2004).

Several questions arise at this point. Why does the organisation continue learning (in the event that it does, as assumed within the evolutionary approach (Dosi et al. 1996))? Does it continue to build new capabilities? Why? Does the learning process (or the acquisition of knowledge) have an end or is it continuously dynamic?

As has been previously pointed out, we consider that economic behaviour consists basically in the formulation and interactive deployment of action plans (Encinar & Muñoz 2005). An action plan is the projective allocation of means (actions) to goals. Three possibilities arise when we take into account the relationship between means and goals of action. As has been argued above, the first refers to the situation in which *means, as well as goals are given*, since they are located in the technology of choice timeless system. Within this framework, the discussion on capabilities and intention has no sense as only static problems are dealt with.

A second possibility is illustrated by the dynamic capabilities' discourse. In which agents pursue *a given goal*, which implies a given intention. In this case, the learning process would end when the gap between intention and outcome disappears; in other words, when capabilities are improved in such a way that they enable the satisfactory attainment of the intended goal. Thus, it is the enacted intention of reaching a certain goal

that brings about capability building. This is what gives intentionality such an important role in the process: 'it is in the building of organisational capabilities that the role of intentionality is most reliably displayed' (Dosi et al. 2000: 2). The goal might not be attained quickly if it is a very challenging one,⁴ it might never be attained if it is technically unfeasible⁵ or in the event that the organisation is incapable of learning and performing the needed actions. The latter case includes the situation in which interaction with other agents (individuals, organisations) transforms the action space of the organisation, altering its plans and complicating the learning process. But the intended goal might be also attained if it is technically feasible and the organisation is able to deploy the necessary actions (e.g. learning, adapting, building capabilities) to succeed in its purpose. Once this happens there is no apparent reason for the learning dynamic process to continue.

When means are not provided, agents have to find those which are most appropriate to reaching their (given) goals. They will learn through intended search, through interaction, they might discover completely new ways of organizing actions, they will develop competence, build capabilities, and they might even invent new tangible artefacts that will suit their aspirations. Opening the means side permits us to address, within the domain of economic theory, dynamic processes of innovation and novelty creation, which is not possible in the technology of choice system where rational efficient choice is made instantaneously. Nevertheless, once the given goal has been reached, the evolutionary dynamic learning process is condemned to an end, to arrive at a stationary state where novelty and innovations cannot take place. Within this framework, intention plays the role of activating the process of capability improvement.

In order to remain in a dynamic space of action without a pre-established time horizon, where agents can deploy ongoing learning processes, we also need *a genuine analytical open-*

ness of the goals side. The very nature of novelty should be outlined here. In a true dynamic evolving economy, in which time has a real significance, goals, as well as means, must be open. For example, new goals may appear, old ones hierarchically re-organized, attained goals can be removed from agents' plans, and unattained ones may be substituted by others. These changes bring about learning processes as well as the emergence of completely new actions not necessarily explained by the mere acquisition of knowledge.

Although this is clearly recognised by authors, particularly within the dynamic capabilities literature, to our knowledge, the goals side has not been analytically integrated into the dynamic theoretical system. This integration needs to take place in order to keep the dynamic consistency of the evolutionary approach, particularly because important sources of novelty may be located in the open goals side.

3. FROM DYNAMIC CAPABILITIES TO 'EVOLVING CAPABILITIES': THE ROLE OF INTENTION WITHIN INNOVATION PROCESSES

An open structure where neither means nor goals are given will permit us to move further away from the 'timeless system' and to address additional features of economic change. It is in this context that the role of intention may be addressed. The following paragraphs show, in the first place, how agents' intentions can activate a capability development process and how this process may in turn induce intentions towards new goals. In this sense we will argue that capabilities are not only dynamic, but also evolving, adding therefore new pieces to the discussion on self-transforming processes. However, showing that capabilities evolve is not enough to address the direction and the orientation of self-transformation processes. Why do organisations (and their capabilities) evolve in different ways? Why do they follow different development trajectories? The analytical opening of the dynamics of goals formulation permits us to search for new explana-

tory elements. We believe that the concept of *innovative intentionality*, which will be defined in this section, may contribute to advance in the answering of those questions.

Agents use their imagination to conceive their goals of action, based on a multitude of factors: psychological, social, cultural, ethical, etc. They invent the future they want to live and work towards. This idea is valid whether we consider a goal in the very near future (to see a play tonight), the middle term (achieving company sales of one million Euros before the end of the trimester) or the long term (discovering a universal cancer cure). For this reason we want to distinguish imagination from the typical Austrian discovery approach to goals when addressing entrepreneurship (Kirzner 1992). Opportunities of action (business) are not hidden somewhere in reality waiting to be discovered by the entrepreneur or the *visionaire*. It is the invention and selection of goals that provides meaning to certain opportunities of action.

Although a goal may eventually be treated as a static element, intention is inherently dynamic. It can be seen as a tendency towards a goal which firstly needs to be in the mind of the person (or group of persons) as a purpose. The definition of intention is linked to the concept of action plan. 'To intend something is equivalent to have the plan that something should be' (*Oxford Dictionary of English*). Something turns out to be a goal through an intention driven by a motivation, understood as a reason for acting in a particular way (e.g. needs, desires, stimulus, impulses). What is ultimately intended by these actions or behaviour will be referred to as a goal, defined as 'the object of a person's ambition or effort' (*ibid.*). We consider therefore that the concepts of intention and goal are strictly linked to that of action plan. Enacted intention is precisely what permits us to differentiate between individuals' (or groups of individuals) goals and their dreams or desires. The latter do not necessarily activate agents' actions. On the contrary, the conception of goals activates behaviour and actions oriented,

by means of enacted intention and will, towards their achievement.

At the same time, the temporary and social dimension of action implies that motivations, desires and aspirations may vary while the agent is acting; transforming his/her/its goals in comparison to what was initially intended. There is, of course, a long tradition of psychological discussions and literature concerning the above defined concepts. Although it is subject to great controversy in philosophical and psychological discussions the importance of intentionality for explaining human action has been widely recognised (see, for example, Ferrater-Mora 1994). These topics are of great relevance to the understanding of human behaviour and are located in the frontier between economics and psychology (Brocas & Carrillo 2004).

Once we assume that enacted intention is a performed tendency towards a goal and that neither intentions nor goals are given we are in a position to reflect on the role played by intentions within dynamic processes. The analytical opening of goals and intentions permits us to see the dynamic consistency of the evolutionary approach. In this approach to dynamic capabilities we have found a causal linkage between the formulation of certain goals (improved effectiveness, achieving new and innovative forms of comparative advantage) and the development of capabilities that are needed in order to reach them. In this sense, *intention activates a capability development process*.

The development of new or improved capabilities reduces the gap between the goal the agent intends to achieve and the real outcome of its actions. Accordingly, the capability building process may contribute to reducing this gap. However, departing from the assumption of *open goals* we also need to consider the possibility that capabilities open up (as they do very often) new possibilities of action. A person is unlikely to state the goal of becoming a Russian translator before learning Russian. Throughout an evolving and interactive learning process, capabilities are

shaped and re-shaped through constant path-dependent feedback with goals. New or improved capabilities open up the possibility of setting new goals. Actions intended to achieve them may also imply the appearance of new capabilities or modifications in previously existing ones.

It is partly through the development and the exercise of capabilities that dreams or desires may turn into goals. The performative aspect of capabilities is very important: in this context, as it is for Feldman and Pentland (2003) and Howard-Grenville (2005) in their discussions on organisational routines. *Capabilities can activate intention*. A child can have the dream of becoming a professional pianist someday. It is only when the child starts growing up and begins to study music and play the piano at school that he/she feels that he/she may one day become a professional pianist. The corresponding intention and goal can then be set: I want to be a pianist (in the sense of *I will be* a pianist). What was imagined one day is deemed possible after certain capabilities are developed (and exercised). Continuing with this example, let's imagine that this person succeeds in his/her piano studies and becomes a professional pianist. The story might not end here, as the pianist can set the goal of becoming internationally famous and much in demand. Succeeding in this new plan will require the development of new technical and even political and social abilities.

The previous example simply aims to illustrate the idea that considering open means and open goals (and open intention as a dynamic link between capabilities and goals) allows for the analytical treatment of constant endogenous change as there is constant feedback between imagined intended goals and the actions deployed to reach them (means). In 2000, the European Council of Lisbon set the general goal for the European Union of becoming the most dynamic and competitive knowledge-based economy in the world by 2010. In order to attain this objective some intermediary goals have been set: reaching an average of 3% of GDP in R&D expenditures,

building the European Higher Education Area and also the European Research Area (ERA). As a result of these goals, far-reaching transformations in institutional (educational, scientific, political) systems of the member countries have taken place and will continue throughout the decade. Institutions need to reorganise their structures and procedures. Furthermore, the construction of the Higher Education and Research European Areas will certainly open up new possibilities for many agents in the European Union. The opening up of opportunities might be translated into the formulation of new individual and collective goals that will trigger further endogenous transformations. Here again we illustrate how constant endogenous change is only conceivable in a context where neither goals nor means are *a priori* considered as given.

The consideration of constant feedback process between intentions, capabilities and goals leads us to move from a dynamic perspective to an evolving one. On the one hand, *intention activates the development of new or improved capabilities*, reducing the gap between what agents want to achieve and the outcome of their actions. On the other hand, *capabilities activate intention*, as the development of new or improved capabilities makes it possible for agents to conceive new goals. This feedback process is at the basis of the self-transformation of agents' action spaces. Dynamism implies movement whereas evolution means self-transformation over time. *In an analytical framework where goals are submitted to change and evolution, capabilities are not only dynamic, but also evolving.*

The idea that intentions and goals evolve over time within an interactive environment, and that by doing so they induce changes in agents' capabilities, which may also result in the formulation of new goals and intentions and therefore in renewed or improved capabilities is at the core of our argument. As has been pointed out, once the goals side of allocative processes remains analytically open, these become creative and dynamic processes not predetermined to reach a stationary

state. We are therefore getting closer, from an analytical perspective, to the reality of evolutionary systems, characterised by constant endogenous change (Witt 2003) by novelty generation (Metcalf & Foster 2004) and thus by *self-transformation over time*.

However, as has been stated in this section's introductory paragraph, this constant feedback process, although necessary to address self-transformation, is not enough to explain the direction and intensity that transformation may have. We argue that a further inquiry into the features and quality of action goals is necessary to address these matters.

It is a fact that individuals and organisations are characterised and differentiated by their capabilities and knowledge (a nurse and an engineer develop different capabilities as do tennis and chess players) but also that they may pursue different goals. Agents' intentions and goals vary greatly. What mainly distinguishes a football team, a non-governmental organisation and a bank is the goals they set: for example, winning the league, assisting homeless people and increasing profits. Of course, this also explains the differences between the knowledge the three organisations acquire and the capabilities they develop. They differ greatly and can cause a great variety of changes in the environment, in what we may call the action space. Moreover, we may qualify the difference between goals in a sense that helps us in achieving our explanatory purposes: the analysis of the direction and intensity of transformation.

Organisations might or might not aspire to transforming the production and consumption spaces of agents. They might intend to bring about large or small transformations or they might simply aspire to adapting to the transformations made by others. If they do not even intend to adapt to external changes, the chances of survival is low (it would depend on the characteristics of the sector). The *kind of intentions* that agents have is an explanatory factor of economic dynamics, particularly of innovation dynamics

and economic change. Good examples of the different dynamics linked to intentions may be found in the consequences of inheriting or selling a firm. Although the capabilities of the organisations are essentially maintained when the ownership changes, goals may change radically.

By addressing *the kind of intentions*, we are in fact qualifying them and the goals they are linked to. Agents may formulate and act towards goals which transform more or less the realities they perceive. The proposed concept of *innovative intentionality* permits us to condense the previous ideas. We define innovative intentionality as the *will to conceive or imagine realities which differ from the perceived realities, with the purpose of making them effective*. Innovative intentionality is a transforming impulse and will which orients action towards the generation of change in reality. As has been pointed out, innovative intentionality varies according to the agents, whether these are individuals or businesses, social or political organisations. We believe this is an important fact that the explanation of economic evolution needs to address. In simple terms, we are just stating that what agents want to do and intend to do, apart from what they know and are able to do, is what orients interactive action and therefore contributes to explaining the paths followed by self-transformation processes.

Moreover, we are stating that agents are characterised by different transforming intentions (innovative intentionality). These facts could not be integrated into the theory before considering dynamic, changing, open goals of action and before addressing the capability building process as evolving and not simply dynamic. These considerations open up, in our view, new ways to advance in the theoretical analysis of self-transformation processes. Innovative intentionality appears to be an interesting concept for addressing the divergence of innovative dynamics among organisations and societies.

4. CONCLUDING REMARKS

Our argument may be summarized as follows: it

is by considering the essential dynamic dimension of intentions and action goals that we may argue that individual and organisational dynamic capabilities evolve. Capabilities are renewed and reshaped by the appearance of new action goals. A feed-back process between capabilities and goals opens up new possibilities of action. This may happen when agents (organisations and individuals) act towards their goals, transforming capabilities and renewing the spaces where actions are conceived and deployed. Moreover, agents' goals vary greatly. They vary not only in the sense that they are different but also because they might be characterised by different transforming intensities. We synthesize this idea through the proposed concept of innovative intentionality, defined as the will to conceive or imagine realities which differ from the perceived realities, with the purpose of making them effective. The heterogeneity of agents is not only a matter of differences in knowledge, but also of differences in action goals and intentions. Agents may be qualified by their innovative intentionality. This source of heterogeneity generates also variety and nourishes evolutionary processes.

We are not arguing, however, that all changes that society experiences are the result of intended action. Not every action is intended, as is shown by the literature on routines. But by the same token, not every outcome of an action is intended; the result might not come out as originally planned. Interaction (or providence) might lead to surprising unplanned results – as the development of today's global telecommunications system shows (Dosi et al. 2000: 2). However, although not every action is intended and not every novelty is the result of intended action, agents' intentions are key explanatory elements for understanding important features of economic dynamics.⁶

An interesting question arises, following on from the previous arguments, concerning the relationship between the concepts of innovative intentionality and entrepreneurship. Although it was not the purpose of this paper to deal with the

innovative intentionality and entrepreneurship relationship, it deserves in-depth discussion. The role of intention in self-transforming economic processes might permit us to refine the concept of entrepreneurship. Metcalfe (2004: 167) has stated that:

entrepreneurs believe something that nobody else believes, and do so with sufficient *strength of mind* to act upon the belief and commit economic resources to a business plan. This belief must be grounded in the understanding of the individual concerned and this understanding must be grounded in that individual's knowledge of the existing economic world. (italics added)

What is the meaning of 'strength of mind'? Innovative intentionality, by incorporating to the analysis the role played by will and intention might somehow contribute to progress in Metcalfe's pointed direction.

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Endnotes

- 1 This consideration is essential in order to endogenize the generation of novelties within economic processes; and it enables us to overcome what we have named 'Schumpeter's paradox' (Encinar & Muñoz 2006).
- 2 In the original version (Teece, Pisano & Shuen 1997: 516) the definition is slightly different 'We define dynamic capabilities as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments. Dynamic capabilities thus reflect an organization's ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions.'
- 3 The concept of action plan can be found in economists of different traditions such as Keynes (1936), Stackelberg (1943), Debreu (1959), Boulding (1991), Hayek (1937), etc. In some authors, plans are merely a name (Debreu). In others, it is a central concept of their works. It is also recognized in neuroscience: Fuster (2003), for example, localizes 'plans of action' in the pre-frontal cortex of the human brain.

- 4 If an organization decided to develop the necessary technology to create pleasant living conditions on Mars in order to build and sell houses there, it would undoubtedly take an extremely long time and therefore a very long learning process, before succeeding. There is a high probability of failure in this case.
- 5 A religious organization may set the goal of bringing their deceased members back to life by developing mental capabilities.
- 6 According to Popper (1948), the role of the social sciences is to explain the unintended consequences of human actions. For the action to be rational there must be a goal, an intention. However, given the internal structure of personal action, this does not prevent novelties or unforeseen consequences arising from the interaction of plans.

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